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IS 11555-1 (1986): Designer's data sheet, Part 1: Mechanical design of columns [MED 17: Chemical Engineering Plants and Related Equipment]

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“Knowledge is such a treasure which cannot be stolen”

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IS : 11555 (Part 1) - 1986

(Reaffirmed 2003)

Indian Standard

DESIGNER'S DATA SHEET

PART 1 MECHANICAL DESIGN OF COLUMNS

Chemical Engineering Sectional Committee, EDC 57; Basic Chemical Engineering Standard Subcommittee, EDC 57:1 [Ref : Doc : EDC 57 (4342)]

1. Scope — Covers the technical data to be supplied by the designer of the columns to the fabricator for the fabrication of the distillation column as per the design.

2. Designer's Data Sheet

DESIGNER'S DATA SHEET FOR MECHANICAL DESIGN OF COLUMNS

1. Client/purchaser
2. Plant Location
3. Service
4. Column inside diameter, mm
5. Type of internal

OPERATING CONDITIONS

6. Working pressure, MPa Internal......Top......Bottom......
7. Working temperature, K Internal......Top......Bottom......
8. Design pressure, MPa Internal......External...............
9. Design temperature, K

MATERIAL OF CONSTRUCTION

10. Shell/reinforcement pad
11. Heads
12. Shell flanges
13. Nozzle flanges/blind flanges
14. Nozzle neck/manhole neck
15. Couplings
16. Pipe fittings
17. Gasket external
18. Gasket internal
19. External studs/bolts/nuts
20. Internal bolts/nuts

(*Continued*)

Adopted 1 January 1986 © November 1986, ISI Gr 2

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NEW DELHI 110002

DESIGNER'S DATA SHEET FOR MECHANICAL DESIGN OF COLUMNS — *Contd*

21. Skirt/support
22. Skirt/support base
23. Internal parts : supporting, bolting bars and internal piping, vortex breakers and baffles
24. Trays (if welded construction)
25. Clips and attachments (external)
26. Wrapper plate
27. Demister/grid

ADDITIONAL DATA

28. Corrosion allowance
29. If lethal service, to be specified
30. Radiography (if any special requirement)
31. Post-weld heat-treatment (PWHT)
32. Wind speed
33. Earthquake specification
34. Insulation thickness
35. Insulation specification
36. Any hardness restriction after PWHT
37. Any normalizing requirement
38. Soil data
39. Crane boom length and capacity
40. Ladder and platform standards
41. Any piping stresses on vessels
42. Inspection by sight glass required
43. Any special requirements

OUTPUT DATA

44. Vessels thickness, mm
45. Vertical and horizontal weld joints
46. Types of head
47. Joint efficiency, shell............Head
48. Radiography, shell..............Head
49. Post-weld heat-treatment (PWHT)

(*Continued*)

DESIGNER'S DATA SHEET FOR MECHANICAL DESIGN OF COLUMNS — *Contd*

50. Wind speed

51. Earthquake data

52. Soil data

53. Crane boom length and capacity

54. Painting/cleaning requirements

55. Insulations thickness

56. Fire proofing

57. Hydrostatic test, horizontal/vertical

58. Special stiffening requirement for small nozzles

59. Hardness restriction after post-weld heat-treatment

60. Normalizing requirements

61. Skirt support details including special requirements

62. Inspection by

MATERIAL OF CONSTRUCTION

63. Same as for input data

FOUNDATION LOADING DATA

64. Type
Maximum shear force at base (*H*) kg
Maximum moment at base, kg.m

65. Erection weight

66. Operating weight

67. Shutdown weight

68. Hydrostatic test weight

69. Wind

STATUTORY REGULATIONS

70. Indian boiler regulations

71. Chief inspector of explosives

ATTACHMENTS

72. Attach process column drawing showing nozzle size, ratings, locations, elevations, orientations and internal details

General Notes

a) All dimensions in mm
b) All anchor bolts are to be straddle with respect to centre line
c) For nozzles on shell, projections are referred from vessel centre line to flange contact face
d) For nozzles on head, projections are referred from heat tangent line to flange contact face
e) The indicated thickness is the minimum acceptable after construction
f) Flange gaskets face shall have 125 rms finish.

EXPLANATORY NOTE

The data provided according to this data sheet will enable the fabricator to know the exact details of the column and will fabricate the column as per the design advised by the designer.

This Indian Standard is being issued in two parts as:

Part 1 Mechanical design of columns; and

Part 2 Column internals.

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